

JUN 15 1993

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

Allocation of the  
219-220 MHz Band for Use by  
the Amateur Radio Service

)  
)  
) ET Docket No. 93-40  
)  
)

To: The Commission

COMMENTS OF  
THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED

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## SUMMARY

The American Radio Relay League, Incorporated submits its

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COMMENTS OF  
THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, by counsel and pursuant to §1.415(a) of the Commission's Rules (47 C.F.R. §1.415(a)), hereby respectfully submits its comments in response to the Notice of Proposed Rule Making, FCC 93-119, 8 FCC Rcd. 2352, released March 22, 1993 (the Notice). The Notice proposes to allocate the 219-220 MHz band to the Amateur Radio Service on a secondary basis, nationwide, for amateur fixed auxiliary stations, in response to a petition for rule making, RM-7747, filed by the League June 4, 1991. In support of the Notice proposal, the League states as follows:

I. Introduction

1. The allocation of spectrum near 220 MHz, to replace that lost to the Amateur Service following the reallocation of the 220-222 MHz segment to the land mobile services, would be a great relief from difficult circumstances for the Amateur Service. The Commission's accommodation of amateur communications in this

instance is both urgent and greatly appreciated by the amateur community. There has been, since the Amateur Service was required to ~~cease~~ use of the 220-222 MHz segment in August of 1991,<sup>1</sup> a

operation. Rather, it was occupied by fixed auxiliary links and weak-signal experimentation. Furthermore, it was the principal target segment for then-developing high-speed fixed data links on an inter-city basis. Arrangements for reaccommodation of amateur weak-signal operations in the 222-225 MHz segment are ongoing, but have been extremely difficult, due to preexisting occupancy of the 222-225 MHz segment by other amateur uses. Reaccommodation of fixed auxiliary links, and the development of the relatively wideband, high speed data links between cities for emergency and public service data message handling, has been difficult or impossible under the circumstances in metropolitan areas of the country.

3. Congressman Wise, then Chairman of the House Government Information, Justice and Agriculture Subcommittee of the Committee on Government Operations, on June 7, 1989, wrote to Dennis Patrick, then Chairman of the Commission, following a hearing on the subject of the 216-225 MHz allocation procedures. Mr. Wise noted that his impression of the hearing record was that "too little thought has been given to potential compromises that might serve the needs of each of the various parties." The letter outlined four alternatives to the reallocation of the 220-222 MHz segment. Three of those four alternatives involved some alternative to, or a reduction in, the reallocation of the 220-222 MHz segment. The fourth was that the Commission offer, as replacement spectrum, a secondary allocation at 216-220 MHz. As Congressman Wise put it:

In all of these scenarios there needs to be retention of amateur capabilities in metropolitan areas where present and desirable future activity at 220-222 MHz cannot be shifted on top of what already exists at 222-225 MHz. The

protection of channel 13 television reception from harmful interference is also important, as is the protection of existing fixed and waterways-related mobile activity at 216-220 MHz.

4. Though none of these alternative plans was adopted by the Commission in previous proceedings involving the 216-225 MHz band,

## II. The League Supports the Proposed Rule Changes

5. The League supports the proposed rule changes in Appendix A of the Notice of Proposed Rule Making relative to technical operating criteria, with only minor exceptions. The Notice proposes a 50-watt PEP output power limit for amateur operation in the band, as the League's petition had proposed. This would appear to be necessary and sufficient to prevent harmful interference to other occupants of the band. Indeed, it is anticipated that most stations using data communications would utilize power levels considerably less than 50 watts, though such may be necessary to complete wideband intercity data links. Similarly, given the interference avoidance requirement for amateur use of the band; the interference analysis that must be performed before initiation of amateur operation in the band; and the rather specific auxiliary type uses to which the band will be put by amateurs. the League firmly



rate, assuming that the same overall RF mask<sup>4</sup> is used. The maximum symbol rate of 56 kilobauds specified in § 97.307(f)(6) of the current Amateur Service Rules, which the Notice proposes to apply to the 219-220 MHz band, is unnecessary and undesirable. Specifically, it limits innovation prima facie by codifying existing 56 kilobaud technology. The 56 kilobaud limitation would prohibit amateur stations using the international standard rate of 64 kilobauds, for example, which may be a desirable next step in the evolution of high speed packet radio. By contrast, the 100 kHz authorized bandwidth is appropriate to all the bands to which § 97.307(f)(6) applies and tends to provide a natural cap on signaling speed (on the order of 87 kilobauds). Accordingly, the League urges that the sentence, "The symbol rate must not exceed 56

unnecessarily restrictive. The Notice, at paragraph 13, asks whether the proposed allocation should be limited to digital data communications, digital communications of whatever nature including digitized voice, or whether any modulation or access method should be permitted so long as it is employed for point-to-point fixed communication. The League suggests that at the present time, digital communications which otherwise comply with the technical rules applicable to amateur operation in the band, including digital voice, should be permitted, but that other modulation techniques involving a different RF mask, such as analog voice links, should not be permitted. The determining factor is the potential interference characteristic of the modulation scheme.

### III. Interference Avoidance Considerations

8. Portions of the proposed provisions of § 97.303(r)(1) of the Amateur Service rules, to the effect that no amateur station operating in the 219-220 MHz segment shall cause harmful interference to broadcast television channels 11 and 13, or to the newly created Interactive Video and Data Service (IVDS) would require the amateur station to be responsible for matters over which, to a great extent, it has no control, to-wit: the

respect to television broadcast interference should be limited to the spectrum purity standards already covered in existing §97.307, and adherence to those technical rules deemed adequate to protect services in adjacent or nearby bands.<sup>6</sup> Accordingly, the League recommends that the proposed §97.303(r)(1), insofar as it refers to television or IVDS receiver interference, should be deleted.

9. The League has held detailed consultations with Waterway Communication System, Inc. (Watercom) and is confident as a result that amateur point-to-point operations can be "engineered in" the 219-220 MHz band without harmful interference to AMTS operations. The most critical engineering considerations are those where amateur links will cross the AMTS waterways. In this respect, and as a general matter, specific interference mitigation techniques have been identified and will be addressed cooperatively. The

conduit for such notifications as may be required from an amateur station seeking to initiate a particular fixed facility, to AMTS licensees within notification or written approval distances, as the Commission has suggested at Footnote 20 of the Notice.

10. The Notice, at paragraph 26, specifically asks for comment on the distances that should be specified for invoking the notification and approval requirements. The spacing requirements for the notification procedure specified in the Notice (between 50 and 150 miles, or 80 and 240 km) appear reasonable to the League. However, discussions with Watercom indicate that AMTS licensees may be more comfortable with a 400-mile notification zone. This is apparently due to the occasional instance of VHF tropospheric ducting which occurs in this band, which subjects AMTS stations to interference from other AMTS stations up to 400 miles away. Since the League plans to maintain a national database, which will be shared with AMTS licensees as necessary, this expanded notification zone should not constitute much of a burden to amateur licensees, and the League would not object to such a requirement, if it is deemed necessary by the Commission.<sup>7</sup>

11. On a related subject, discussions between the League and Watercom indicate that AMTS licensees might prefer a slightly longer period (from the 14 days proposed in the Notice for notification of intent to operate, to 30 days prior to commencement

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<sup>7</sup> The League believes that the advance approval requirement for amateur stations located 80 km or less from an AMTS facility is more than adequate to protect AMTS stations from interference.

of operations). Such an expanded notification period is not unreasonable under the circumstances, and from the amateur's perspective, the longer timetable for notification will approximate the usual lead time in assembling a station, and will provide some time to work out alternatives if something, such as the operating frequency or antenna polarization, should require modification prior to initiation of operation. Advance planning by amateurs of such operations would take up the additional notification lag time, in most instances, anyway.

12. With regard to frequency coordination at 219-220 MHz between and among amateur licensees, there is an important role for established repeater coordinators active in coordination of amateur operations at 222-225 MHz. Intra-service coordination by recognized, established amateur repeater coordinators (which coordinate 222-225 MHz activities generally, including packet operations) is a useful and important function in terms of interference avoidance within the Amateur Service.

#### **IV. Conclusions**

13. The League is most gratified that the Commission has proposed the secondary allocation of the 219-220 MHz band to the Amateur Radio Service. It is firmly believed that amateur operations in this band can and will be accomplished without causing harmful interference to co-channel and adjacent channel users. The notification and approval procedures established in the Notice are reasonable and not overly burdensome on amateurs seeking

to commence fixed operations in the band. The League looks forward to initiating informal liaison procedures with AMTS licensees, and appreciates the cooperation of Watercom to date with respect to technical and procedural sharing requirements in the band. With the few "fine tuning" rule changes noted herein, the League supports the proposed allocation plan wholeheartedly and requests adoption of final rules at the earliest possible date.

14. Notwithstanding the concern reflected in the Notice with respect to interference potential from amateur operation at 216-220

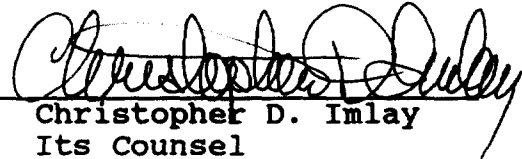
adopt the Notice proposals, with the minor modifications set forth herein, at the earliest possible moment.

Respectfully submitted,

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